

How current “conservation” destroys both, wolves and coyotes.

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Great efforts have been made to conserve gray wolves in the United States and in Europe. However, in the rush to re-establish wolves in settled landscapes without a comprehensive review of their biology, let alone the long history of wolves in contact with humans, some errors have been made. Rarely in history has as fervent an effort to reach a worthy goal such as this achieved exactly the opposite. For our laws and those in the European Union remorselessly grind towards, not the conservation of wolves, but towards their assured destruction as a species, and in North America, that includes the coyote as well. As we shall see, oddly enough, the coyote is more endangered than the gray wolf. This fiasco is so large and complex, that to review it here in detail would be counterproductive. Let me, therefore, abstract the problem and outline solutions, because the problem is not unsolvable. Not yet!

The gray wolf is a widespread, non-endangered species, and the great British naturalist, David Attenborough, got it right. He cautioned, that since there are so many endangered species in dire need of our attention, we should not spend time, effort and money on wolf re-introductions.

Modern humans and gray wolves met first in Europe, when modern people advanced into what had been Neanderthal's stronghold some 40,000 years ago. And the conflict with gray wolves began right there, as geneticists have been able to decipher. It has continued ever since, with humans generally, but not always, getting the upper hand. The gray wolf spread into North America along with grizzly bears, elk and moose, occupying the ecological vacuum created by the extinction, at human hands, of the native North American mega-fauna. Humans could not exist here with the native gigantic and very aggressive predators, any more than humans colonizing Australia earlier could exist with huge, swift-running terrestrial crocodiles and gigantic ambush-hunting monitor dragons. Humans, from their very ancient beginning, have destroyed predators to assure safety and security. In Eurasia and North America, however, native people developed means and ways to live with wolves, and wolves survived along with people and domestic dogs. Crossover between wolves and dogs was then minimal, and wolves remained wolves and dogs remained dogs.

In general, it was not in the interest of native people living off the land from wildlife to exterminate wolves entirely. Large, uncontrolled populations of wolves inflicted intolerable, life-threatening damage, especially to people that made a living hunting big game. However, a few wolves could be quite beneficial. They kept down the meso-predators, the little fellows, the mink, ermine, otter, skunk, foxes, or raccoon's,

which, if not controlled, rapidly increased in numbers and wiped out easy-to-get fish and waterfowl resources. So, native American people developed a tolerance and mythology about wolves. Among modern nations Japan is unique in having had a history in which wolves were supported and venerated by disarmed peasants as a means of warding off deer and wild boar that destroyed agricultural crops. However, faced with the horror of rabid wolves, Japan exterminated wolves by 1905.

The coyote has a different history. This little clever wolf is the product of the incredible predation pressure that characterized Ice Age North America, in sharp contrast to Eurasia or Africa. The distinctive feature of the coyotes evolution, is that it not only survived, but thrives in the most extreme predator fauna of the Pleistocene. There were numerous North American predator species. They were often gigantic, such as the predacious short-faced bear, or huge lions and sabre-toothed cats. They were highly specialized and very assertive, as the many healed broken bones and broken teeth attest to. North America was a predator hell-hole during the Ice Ages. The few survivors of this fauna such as the coyote, the black bear, the cougar, the raccoon, our native deer and pronghorn, are very smart, brainy, adaptable creatures. They are well-versed in looking after themselves. They are not endangered. Compare that to the problems caused by gray wolf or grizzly bear, both Siberian immigrants that entered and spread in North America only after the extinction of the native American fauna. In short, the coyote is a clever, distinctive, uniquely American little wolf.

There is no argument that today we have an obligation to conserve large predators. The question is how to do it best. Unfortunately, the policies pursued by the USFWS and the EU are guaranteed to destroy the wolf as a species and, in North America, the coyote as well. By introducing wolves into settled landscapes with large populations of domestic dogs or coyotes, one insures that wolves will hybridize with these in the long run. This process is currently in full swing in eastern North America where wolves, coyotes and domestic dogs are melting together into the “coywolf”, an artifact of indirect human activity. It is not even a “species”, but an artificial mixture of canid genes. And the policies of the USFWS now insure that wolves, coyotes and dogs are all together. In essence, there is a policy of “coywolfing” America!

According to von Holdt et al only two species of endemic canids exist in North America, the gray wolf and the coyote, while the so-called eastern wolf and the red wolf are hybrids of the two. To what extent there are - or are not - subspecies in the gray wolf, there is an ongoing debate. I opt for the absence of subspecies. While the gray wolf and coyote are recognized taxonomically, the hybrids are not.

Actually, hybridization is extensive as reported by von Holdt et al, because in the eastern North America gray wolves, coyotes and domestic dog have flowed together to

form the “coywolf”. Based on the analysis of 437 coy-wolves, their DNA was found to contain about 66 percent wolf, 25 percent coyote and 10 percent dog. Moreover, all coyote populations tested contained dog genes. “We found that all North American wolves and coyotes have significant amounts of coyote ancestry. In addition, we detect a strong geographic cline in the proportion of coyote ancestry across North American canids. Alaskan and Yellowstone wolves have 8 to 8.5% coyote ancestry, Great Lakes wolves have 21.7 to 23.9% coyote ancestry, Algonquin wolves have at least 32.5 to 35.5% coyote ancestry, and Quebec sequences have more than 50% coyote ancestry. As expected, Eurasian wolves and dogs, which are allopatric to coyotes, do not have coyote ancestry.” Anderson et al demonstrated that some introgression of dog genes into wolves in North America was quite ancient. And while the re-introduced Mexican wolves currently show no trace of any hybridization, older specimens do show evidence of hybridization with coyotes. And more recently a Mexican wolf female and her hybrid pups were destroyed by the USFWS after the female failed to abandon dog company. A similar case occurred in Oregon. I obtained three skulls from the first packs and one skull from the second pack of wolves which settled about my home on Vancouver Island, Canada, between 1999 and 2007. All three skulls from the first pack showed dog characteristics. The carcass of the largest male wolf of that pack was sent to the USFWS Wildlife Forensic Laboratory in Ashland, Oregon, USA. I was informed subsequently that, on morphological grounds, it was considered a wolf, albeit a somewhat odd one. The one skull from the second pack was that of a wolf. There are no coyotes on Vancouver Island. The integration of dog genes into North American gray wolves requires investigation.

Nor is the hybridization by wolves confined to North America. Zhenxin Fan et al found up to 25 percent of European wolves showing dog ancestry. Randi et al found extensive hybridization (87.5% of sample) in Italian „wolves“, so called. In Bulgaria Moura et al found that almost 10 percent of the wolves had dog ancestry. Kopaliani et al found that in the Caucasus wolf/dog hybridization was extensive and ongoing, and Godinho et al found such was present at a lower level in Iberian Peninsula and ongoing. Hybrids were found in Iran, Latvia, Estonia and Poland. Furthermore, there was some evidence of jackal gene retrogression into wolves and dog hybridization with jackals. That hybridization of jackals with dogs and wolves has been underestimated is demonstrated by the appearance of wolves with fore-paws diagnostic of jackals in Italy, Switzerland, France and Germany. Dogs hybridized in Ethiopia with the rare Ethiopian wolf. The wolf hybrid issue, however, is studiously avoided by authorities in Europe as the tolerance of such hybrids is in breach of the Bern Convention. Quoting Arie Trouwborst 2014: First, addressing hybridization through preventive and mitigation measures – including, in the wolf-dog context, measures addressing feral and stray dogs and captive hybrids, and the removal of hybrid animals from the wild – is in conformity with the generic species protection obligations of contracting parties

under the Bern Convention, and may indeed be essential in order to comply with those obligations. These conclusions apply regardless of one's position concerning the legal status of hybrids with regard to passive protection requirement. In Europe anything remotely approaching wolf in appearance was genotyped and included into the wolf genetic database, and genetic testing lab admitted to me personally as well as to Kaj Granlund that they had not practiced wolf taxonomy with due diligence. The European genetic databases pertaining to "wolves" are corrupted not only due to lack of due diligence to matters taxonomic, but also by the release of hybrids into the free state from zoological gardens, but above all by the massive release of hybrids along the Russian/Finish borders following the collapse of communist Soviet Russia. There had been substantial breeding of such hybrids for military and border guard purposes, and such has been resumed. A professor of genetics in Sweden assured me, almost vehemently, that the wolves in Sweden originated from Russian hybrid experiments close to Finland. In years past I have been sent pictures of canids from Scandinavia and asked to identify such. In only two out of 18 cases were they images that could have been of wolves. The rest were dogs! I agree with Professor Pjotr Danilov that the German Lausitzer "wolves" are hybrids.

Now, what's wrong with hybridization? Plenty!

Wolves and dogs, their closeness genetically notwithstanding, are not the same animals, and the statement that they are the same species is based, not on understanding, but on ignorance. Species are defined not by phylogeny, but by their adaptations. Consequently, their embarrassing closeness in genetics notwithstanding (1% difference!), chimpanzees and humans are very different species. Similar genes can produce vastly different species, nowhere better illustrated, than by the closeness genetically of hippopotamus and whales. And you do nothing for whale conservation by protecting pigs, any more than you conserve wolves by conserving dogs or wolf/dog hybrids.

Wolf-dog hybrids lack the large brain of the wolf, they give birth at all the wrong times of the year, their jaws lack the bite-force of wolves, they lack the keen ability of observation-learning typical of wolves, they waste time and energy on useless chases after prey, and they are no match at problem solving compared to wolves. The whole attack sequence of wolves has been disassociated in dogs, to serve human needs. Wolf mothers feed pups by regurgitating food, which dogs do not. This predicts that most hybrids will originate from female wolf x male dog crosses, which was verified via genetic studies by Randi et al. Hybrids lack the specialized paws of wolves that allow the gray wolf to kill and consume prey while swimming, to scramble onto ice flows or cross raging rivers, or allow them to travel securely on steep sun-crusting snow in the mountains. Moreover, wolves and dogs deviated not only profoundly in adaptation when dogs specialized as commensals of humans, but also differ genetically by the

“Belyaev effect” once such dogs became human companions, as well as by the idiosyncratic breed modifications of subsequent domestication. Wolves and dogs differ profoundly in their carbohydrate metabolism. There are profound differences in social adaptations between wolves and dogs. Also, feral dogs do not revert to ancestral type as do feral domestic pigeons or pigs, while some dogs differ genetically from wolves more than jaguars differ from leopards. Compared to wolves, dogs in wilderness settings are cripples. And had hybridization of gray wolves and coyotes been a success when the species met some 14,000 years ago, then there would be no coyotes alive today! Protecting hybrids, as well as exposing wolves to hybridization with dogs in settled landscapes, does nothing to preserve wolves. On the contrary, it is a certain way to remorselessly destroy the wolf as a wild, natural species.

This raises of course the question: What shall we conserve?

We must conserve nature. That’s our obligation to the future of human kind. We do not preserve nature by preserving dogs, as these are, ultimately, artifacts, a product of human activity.

Fortunately, wolves in organized packs are somewhat inured against hybridization. Dogs or coyotes straying into wolf country are killed. Hybrid are not expected to survive when meeting pure wolves. And the survival of hybrids, forced to do a wolf’s job in wilderness, is questionable. Segregate wolves from coyotes and dogs, and wolves have an excellent chance of remaining wolves ad infinitum. Not so coyotes. As noted above, all coyote populations tested contained dog genes. While, as shown below, it is possible to segregate wolves and coyotes, coyotes and dogs are difficult, though not impossible to segregate. In an ironic twist of events it turns out that it is not the wolf that is endangered, but the coyote.

Let us be clear: to conserve wolves for the future as a natural species, they must be segregated from dogs, and in America from coyotes as well. And wolves must be maintained in natural, functioning packs. And that is exactly what we had until the latter half of the 20th century in North America, at least in western and northern North America. Wolf populations were kept out of settled landscapes and controlled closely, which kept wolves away from coyotes and minimized encounters with dogs, it also generated abundant wildlife and kept wolf-borne diseases to a minimum. Wolf attacks on livestock let alone people were virtually unheard of. The wolves, faced individually with an overabundance of prey, grew into shy giants that took care of themselves. Such were the wolves I was privileged to observe as a young biologist in northwestern British Columbia in the 1960’s. Big game was unbelievably abundant, and my native Tahltan neighbors considered wolves no problem, even though their means of transportation was dog sled. And dog sleds and wolf packs do not mix. In short, looking to the future, to maintain wolves as a biologic species, we will have to remove them from settled

landscapes and confine them – in a controlled fashion - to a huge area of northern North America covering much of Canada and Alaska as well as to similar reserves in Eurasia. In north America we do not have all the tools to do that; as such would require also a wildlife treaty between the US and Canada.

How about coyotes? Their conservation requires a segregating of coyotes and dogs. Fortunately, the prognosis is not without hope. Dogs and coyotes can be kept apart on the large areas of military and atomic reserves, where people with dogs are normally not permitted. Thereafter, it requires policies and practices surrounding the reserves to minimize dog coyote encounters and encourage a movement of coyotes out from reserves. Where there's a will, there's a way!

What we cannot afford is the status quo, and no action. And it is not only a matter of preserving wolves and coyotes as natural species. There is another silent problem creeping in: the spread of the dog tapeworm *Echinococcus granulosus*, cause of the dreaded hydatid disease, that has come into western US wolves from Canada. Once it has saturated elk and deer populations, as it is apparently in the process of doing, it cannot be kept from infecting coyotes. And next in line are farm or ranch dogs or dogs that stray from rural settlements. If they ingest the viscera of infected hunter killed or winter-killed elk or deer, our dog holding practices insure that the infective tape worm eggs will be brought into the homes of people. The consequences are horrible. Here is a quote from a parasitologist, Delane C. Kritsky, Professor emeritus, Idaho State University, Pocatello ID: We should be asking who (the U.S government, the Fish and Wildlife Service, the wolf advocates) will be paying the health bills and funeral expenses for those who will ultimately become infected as a result of wolf introduction into Idaho, Montana and Wyoming?

Wolves as a species can only be preserved as such away from coyotes and dogs, that is, away from settled landscapes; coyotes can be preserved as a natural species only away from dogs.

The ball is in our lap!

Sincerely, Valerius Geist

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